"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

Obraztsov, K I

BALMASOV, Yevgeniy Yakovlevich; OBRAZTSOV, K.I., retsenzent; GRANAT, S.S., retsenzent; BABAKIN, B.I., red.; BARANOV, N.A., red.; SARMATSKAYA, G.I., red.izd-va; SHITS, V.P., tekhn.red.

[Automatic control of processes in the manufacture of woodpulp and paper] Avtomaticheskoe regulirovanie protsessov tsellyulozno-bumazhnogo proizvodstva. Moskva, Goslesbumizdat, 1955. 248 p. (MIRA 11:6)
(Woodpulp industry)
(Paper manufacture) (Automatic control)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, K.I.; VOROSHILOV, M.S., kand.tekhn.nauk

Automatic regulation of the pulp concentration in a liquid stream. Bum.prom.32 no.8:8-10 Ag '57. (MIRA 10:12)

1. Nachal'nik laboratorii avtomatiki TSentral'nogo nauchno-issledovatel'skogo instituta tsellyuloznoy i bumazhnoy promyshlennosti.
(Woodpulp industry) (Automatic control) (Fluid mechanics)

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OBRAZTSOV, M.

Poltava - Creameries

Poltava dairy plant, Mol. prom., 13, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

SOV/94-58-12-3/19

AUTHOR: Obraztsov, N.D., Engineer

TITLE: Centralised control of Heat Exchanger Boilers (Tsentralizovannoye upravleniye kotlami-utilizatorami)

PERIODICAL: Promyshlennaya Energetika, 1958, Nr 12, pp 7-9 (USSR)

ABSTRACT: The idea of using centralised control of heat exchanger-boilers arose during the modernisation of the induced draught fans, circulating pumps and dampers of the boilers installed after the open-hearth furnaces in Shop No 3 of the Metallurgical Works imeni Dzerzhinskiy in Dneprodzerzhinsk. A similar boiler installation after four open hearth furnaces was installed in the Stalino Metallurgical Works in 1955-56. The centralisation consisted in locating in a single premises the drum-separator, the super-heaters, the circulation pumps and the control panel. The heating surface with induced draught fans was installed on each furnace individually. A defect of this installation is that when it is required to repair a drum the whole installation must be shut down and the four furnaces put on natural draught. This defect can be overcome by the use of centralised control of individual furnace-boiler

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Centralised Control of Heat Exchanger Boilers

units. To make such systems successful it is desirable to improve the methods of scrubbing the open hearth furnace gases. With existing methods of gas cleaning the heat exchanger boilers do not operate reliably enough. The use of ultrasonic coagulation to clean the gases and the provision of special filters and settling chambers will considerably improve the operation of the boilers. The use of mechanical rapping of the convective heating surfaces instead of water washing cuts down the cleaning time and improves its quality. The advantages of centralised control of such heat exchanger boilers can be considered with reference to particular examples. The open hearth ovens of Shop Nr 3 of the Dneprodzerzhinsk Metallurgical Works are now fitted with nine boilers and a tenth is being designed; a plan of the arrangement is given in Fig 1. A schematic thermal diagram of the boilers with centralised control is given in Fig 2. The arrangement of the control equipment is briefly described. When centralised control is provided each heat exchanger boilers must be equippei

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Centralised Control of Heat Exchanger Boilers

with at least four electrically operated valves on the steam lines and provided with automatic continuous blow-down equipment. A block diagram of the interlocking arrangements of the auxiliary equipment is given in Fig 3 and is briefly discussed. The arrangement of the control panel is illustrated diagrammatically in Fig 4 and is explained. When the control system was reconstructed all the existing thermal recording instruments remained in the boiler houses. If centralised control is provided for an entirely new installation there should be one control point only and in the boiler houses there should be recording thermal instruments and emergency stop arrangements. The initial cost of the central control arrangement is about 350 to 400 thousand roubles for 10 boilers and, because of the reduction in the labour force required, the annual economy is 150,000 roubles. The pay-off time is thus about two or three years. It is concluded that when there is a large number of heat exchanger-boilers

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Centralised Control of Heat Exchanger Boilers

installed beyond open-hearth furnaces it is advisable to instal central control equipment. There are 4 figures.

ASSOCIATION: Yuvenergochermet

Card 4/4

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OBRAZTSOV, N.D., inzh.

Using television in the pouring of pig iron. Stal' 23 no.6:574-575 Je '63. (MIRA 16:10)

1. Rostovskoye konstruktorsko-proyektnoye byuro tresta "Energochermet".

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LUTSENKO, N.A., kand.tekhn.nauk; ZHIDOVTSEV, N.A., kand.tekhn.nauk;
OBRAZTSOV, O.I., inzh.

Well cementing on the Shebelinka and Rudki gas fields. Nauch. zap. Ukrniiproekta no.9:49-55 '62. (MIRA 16:7)
(Sebelinka region--Gas well cementing)
(Lvov Province--Gas well cementing)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

LUTSENKO, N.A., NOVAYSKIY, I.N., OBRAZTSOV, S.I., KORINSKIY, R.G.

Using lightened cement grouting. Neft. i gaz. prom. no.3. (MIRA 17:12)
22-24 Jl-S '64.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

LUTSENKO, N.A.; OBRAZTSOV, O.I.

Lightened fibrous cement muds. Burenie no.9:35-38 '64. (MIRA 18:5)

1. UkrNIIgiproneftegaz.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

LUTSENKO, N.A.; OBRAZTSOV, O.I.

Lightened diatomite-cement fluids. Neft. i gaz.prom. no.1:28-30 Ja-Mr '65. (MIRA 18:8)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

LUTSENKO, N.A.; OBRAZTSOV, S.I.

Using portland pozzuolan cement produced by the Bryansk Plant for well cementing. Neft. i gaz. prom. 3:28-30 Jl-S '65.
(MIRA 18:11)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, S.

"5000 years and three years." Vokrug sveta no.9:60 S '53. (MLRA 6:10)
(China--Description and travel) (Obraztsov, S.)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

PLOTNIKOV, M.A.; YEVSTIFEYEVA, T.V.; TAUBER, B.A.; PETROV, V.Ye.; ZAV'YALOV, M.A.; NAZAROV, V.V.; ANOPOL'SKIY, M.G.; OBRAZTSOV, S.A.; BAMM, A.I.; GATSKEVICH, V.A.; CHEVAZHEVSKIY, A.P.; DRANISHNIKOV, L.G., retsenzent; ALKEYEV, N.F., otv. red.; SLUTSKER, M.Z., red. izd-va; VDOVINA, V.M., tekhn. red.

[Lumbering camps; mechanization of work at lower timber landings. A handbook] Lesozagotovki; mekhanizatsiia rabot na nizhnikh skladakh. Spravochnik. Moskva, Goslesbumizdat, 1962. 441 p. (MIRA 16:6)

(Lumbering)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

LAKATOSH, Boris Konstantinovich, kandidat tekhnicheskikh nauk; OBRAZTSOV, S.A., redaktor; TRUBNOVA, L.A., redaktor; KARASIK, N.P., tekhnicheskiy redaktor

[Experience of innovators in building sections] Opyt novatorov zavodov stroidetalei. Moskva, Goslesbumizdat, 1955. 18 p.
(Woodworking machinery)
(MLRA 9:3)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, Sergey Aleksandrovich; TOVSTOLES, M.D., redaktor; SHAKHOVA, L.I., redaktor; KARASIK, N.P., tekhnicheskikh redaktor

[Increasing production in sawmills and woodworking plants] Intensifikatsiia lesopil'no-derevoobrabatyvaiushchego proizvodstva. Moskva, Goslesbumizdat, 1955. 58 p. (MLRA 8:6)
(Sawmills) (Woodworking industries)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

BENENSON, Grigoriy Moiseyevich; OBRAZTSOV, Sergey Aleksandrovich; BOLYATINSKAYA, Lyudmila Sergeyevna; BURKOV, V.I., red.; VOLOKHONSKAYA, L.V., red. izd-va; BACHURINA, A.M., tekhn. red.

[Prospects of the distribution of sawmills and woodworking industries] Perspektivy razmeshcheniia lesopil'nogo derevoobrabatyvaiushchei promyshlennosti. Moskva, Goslesbumizdat, 1960. 206 p. (MIRA 14:6)

1. Laboratoriya ekonomiki TSentral'nogo nauchno-issledovatel'skogo instituta mekhanicheskoy obrabotki drevesiny (for Benenson, Obraztsov, Bolyatinskaya)

(Woodworking industries) (Industries, Location of)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, Sergey Aleksandrovich; SHABALOV, Vasiliy Ivanovich; KOLOBOV, Vladimir Dmitriyevich; PEKLO, Mikhail Il'ich; BASKAKOV, Yo.D., red.; SELOVA, Z.L., red.izd-va; MAKSAKOVA, A.I., red.izd-va; SHISHKOVA, A.Ye., tekhn. red.

[Handbook for the technologist in sawmilling] Spravochnik tekhnologa po lesopileniiu. Moskva, Goslesbumizdat, 1963. 473 p. (Sawmills) (MIRA 16:12)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

KHASDAN, Samuil Mordukhovich; YAREMA, Galina Sergeyevna; OBRAZTSOV, S.A., red.; LEBEDEVA, I.D., red.izd-va; BACHURINA, A.M., tekhn. red.

[Mechanical milling of wood in foreign countries] Mekhanicheskaia obrabotka drevesiny za rubezhom. Moskva, Goslesbumizdat, 1963. 126 p. (MIRA 17:3)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, Sergey Vladimirovich, 1901-; YARTSEV, G., redaktor

[London; notes from a travel diary] London; iz putevogo dnevnika. Moskva, Izd-vo "Pravda," 1955. 63 p. (Biblioteka "Ogonek," no.37)
(London--Description) (MLRA 8:8)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

SERGEYEV, G.M., student VI kursa; KLEMPARSKAYA, N.N., professor, zaveduyushchaya; OBRAZTSOV, T.D., professor, direktor.

Study of the variability of Bacillus coli of man after being in sapropelic mud of Akachkul' lake; author's abstract. Zhur.mikrobiol.epid.i immun. no. 4:61-62 Ap '53. (MLRA 6:6)

1. Kafedra mikrobiologii Chelyabinskogo meditsinskogo instituta.
(Intestines--Bacteriology)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.

Stoletie peroi russkoi zheleznoi dorogi. [A centenary of the first Russian railroad]. (Pravda, April 17, 1938, p. 4).

SO: Soviet Transpotation and Communication, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassfied.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

8046

OBRAZTSOV, V.

USSR/Railways - Area Network 4602.0200 Sep 1947

"The Railroad Network of Our Country's Capital," V. Obraztsov, Academician, 11 pp

"Zh-d Transport" No 9

Historical sketch, and description and diagram of Moscow inner and outer circles. Data on electrification of roads completed and planned for immediate future, as well as on loadings and equipment, with photographs of Moscow-Kiev and Moscow-Ryazan stations. Trackage for USSR in 1946 given as 113,000 km.

8046

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

BRON, O.B.; OBRAZTSOV, V.A.

Automatic devices for magnetic field damping in large synchronous machines. Elektrosila no.14:44-51 '56. (MIRA 12:12)
(Electric machinery, Synchronous)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.A. Cand Tech Sci (diss) " Automatic devices for breaking the field in large hydraulic generators." Len, 1957 19 pp 20 cm. (Min Electrotech Ind; Sci Engineering Institute Inst) 100 copies (KL, 12-57, 104)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

105-7-8/29

AUTHOR BRON, O.B., Prof. D. tech. sc., OBRAZTSOV, V.A., Engineer (Leningrad)

TITLE Damping the Field in Synchronous Machines
(Gasheniye polya sinkhronnykh mashin. Russian)

PERIODICAL Elektrichestvo, 1957, Nr 7, pp 34 - 38 (U.S.S.R.)

ABSTRACT The results of the experiments carried out at the plant "Elektrosila" are given. The here described new system is based upon the application of a curved damping lattice. When damping, first the main contacts of the automaton open up and shortly afterwards the curved damping contacts. The arc produced at the contacts by the influence exercised by the outer transverse magnetic field is pressed into a space which is filled up by a curved damping lattice. The lattice divides the arc into a number of short arcs connected in series which burn as long as the current in the excitation winding has not dropped down to zero. There follows the description and the theoretical explanation of such an automatic device. Such an automatic device which was used at the hydraulic power plant of Kuybyshev can carry out 5 dampings in succession. Measurements on a 4,5 MVA synchron-generator showed that the time of damping amounted to 3,5 sec. by the application of a normal automatic device. The damping of the same field by means of the automatic device with the curved damping lattice took place after 0,39 sec.. The new automatic device, besides, had no molten contacts. (With 6 illustrations and 4 Slavic references).

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Damping the Field in Synchronous Machines 105-7-8/29

ASSOCIATION Not given
PRESENTED BY
SUBMITTED 22. 19. (?) 1956
AVAILABLE Library of Congress

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

ALEKSANDROV, Ye.A.; ATABEKOV, G.I.; YABLOKOV, V.D.; OBRAZTSOV, V.A.; KAZAKOVA, V.A.; GAGORINA, N.P.; SUKHOVENKHOV, V.F.

Inventions. Energ. i elektrotekh. prom. no.2:45 Ap-Je '65.
(MIRA 18:8)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.I.

Role of the laboratory in a cannery. Kons. i ov. prom. 14 no.9:32 S '59. (MIRA 12:12)

1.Tiraspol'skiy konservnyy zavod imeni 1 Maya.
(Canning and preserving) (Testing laboratories)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

S/058/62/000/004/088/160
A061/A101

AUTHOR: Obraztsov, V. I.

TITLE: Problem concerning the mechanism of purification by ultrasonics. I

PERIODICAL: Referativnyy zhurnal. Fizika. no. 4, 1962, 41, abstract 4G342 (V sb. "Primeneniye ul'traakust. k issled. veshchestva", no. 12, Moscow, 1960, 231-249)

TEXT: The mechanism of purification of machine part surfaces by ultrasonic waves in dependence on the kind of impurity and the type of the working fluid is considered. Five special kinds of impurity are examined on the basis of experimental data supplied by different authors: (1) tiny particles, loosely bound to the surface being purified; (2) a compact more or less rigid film, loosely bound to the surface; (3) a compact solid film, firmly bound to the surface; (4) a liquid film of relatively low viscosity; (5) the same, but of high viscosity. In case (1), purification is effected by an "acoustic wind", i.e., by microcurrents forming near projections of the irradiated surface, by their interaction which produces additional forces, and by the formation of long-lived bubbles which emit pressure waves surpassing the pressure of the fundamental

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

acoustic wave considerably. In case (2), purification is essentially effected by cavitation, in which the bursting of vapor and gas cavities produces pressure waves amounting to tens of thousands of atmospheres, and temperatures up to 20,000°C develop at the bursting places. These pressure waves tear up the film, and the currents forming around the rupture places attract non-bursting bubbles, whose oscillations are the source of powerful local pressure waves, by which the film is further removed from the surface, while the remaining fragments are carried off by the currents. The volume oscillations of non-bursting bubbles are also accompanied by local temperature rise, whereby the film is softened. In case (3) the impurity pattern roughly coincides with the acoustic erosion of solids. Here, the opinions of many authors diverge, or the results of the same experiments are interpreted differently, particularly concerning the erosive effect of the gas content in the working liquid. The most effective erosion proceeds with some optimum gas content in the liquid. If the acoustic properties of film and surface materials differ, the surface waves forming in them under the action of the pressure wave will have different velocities and amplitudes which, under certain conditions, may cause the film to break and to be stripped from the surface. In case (4), the impurity is removed either by way of dissolution or of emulsification. In the former case, dissolution is intensified by the

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

Problem concerning the mechanism ...

mixing of the liquid at the interface, by the action of shock pressures which spatter, as it were, the film that has been removed; by the diffusion of one substance into another; by the formation of capillary waves at the interface between two liquids. In the other case, the presence of bubbles in the liquid is usually necessary. Emulsification is particularly intense at solid interfaces (near the vibrator, on the vessel walls, etc), and depends on the acoustic frequency considerably. In (5), as in (4), two cases can be distinguished: the liquid dissolves the impurity or it does not. In the former case, ultrasonics enhance dissolution along the interface; the waves penetrating inside the film heat it by absorption, which sometimes speeds up dissolution. The purification of viscous undissolved films has not been investigated at all. There are 233 references.

E. Denisov

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

S/058/62/000/004/089/160
A061/A101

AUTHOR: Obraztsov, V. I.

TITLE: Problem concerning the mechanism of purification by ultrasonics. II. Cavitation

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 41, abstract 4G343 (V sb. "Primeneniye ul'traakust. k issled. veshchestva", no. 13, Moscow, 1961, 343-356)

TEXT: A critical review of theoretical and experimental studies conducted on the phenomenon of cavitation produced by an acoustic wave is presented. The author reaches the conclusion that cavitation does not always play a decisive rôle in problems of purification, destruction, and the like; under certain conditions, it can even inhibit purification. However, when natural water is used, cavitation is of essential importance, as purification in this case takes place mainly by way of emulsification. There are 26 references. Part I see abstract 4G342.

[Abstracter's note: Complete translation] A. Ryabchikov

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35.08

S/123/62/000/004/008/0[illegible]
A004/A101

1.1950

AUTHORS: Koshkin, N. I., Obraztsov, V. I., Yakovlev, V. F.

TITLE: Continuous ultrasonic method of cleaning microwire

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 4, 1962, 38, abstract 4B218 (V sb. "Primeneniye ul'traakust. k issled. veshchestva", no. 14, Moscow, 1961, 21 - 31)

TEXT: The authors describe an experimental installation for the ultrasonic cleaning of moving microwire, developed by the Laboratory of Molecular Acoustics at the MOPI im. N. K. Krupskaya. The installation makes it possible to carry out cleaning at a microwire speed of up to 25 - 30 m/min. Any organic solvent which satisfactorily dissolves vegetable fats can be used as working fluid for the wire being investigated (enameled constantan and copper wire used in the electro-vacuum and watchmaking industry).

[Abstracter's note: Complete translation]

Card 1/1

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.I.; MOZDREV, V.F.

Dynamics of the removal of fat films by ultrasonic action. Prim. ul'traakust. i issl. veshch. no.15:151-163 '61. (MIRA 16:8)

(Ultrasonic waves) (Cavitation)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

S/058/63/000/001/117/120
A062/A101

AUTHOR: Obraztsov, V. I.

TITLE: On the relation of the supersonic erosion efficiency to the parameters of the working medium

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1. 1963, 73, abstract 1Zh444 (In collection: "Primeneniye ul'traakust. k issled. veshchestva". no. 15, Moscow, 1961, 165 - 178)

TEXT: An experimental study of supersonic take-off of hard films was carried out in non-agressive media. A differential equation was derived for the motion of the walls of a cavitating hollow. Its solutions are obtained for two particular cases. Calculations show the correctness of the prerequisites laid as a basis for the deduction of the equation, and its practical usefulness for making prognoses as to the magnitude of sound erosion in any specific case. In the analysis process it was established that the main factors determining the behavior of the change of the greatest shutting speed are a) the pressure in the cavity and the viscosity of the medium where the parameters change as a function of the temperature and the viscosity, and b) the coefficient of solubility and the diffusion

Card 1/2

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S/058/63/000/001/117/120
A062/A101

On the relation of the supersonic erosion efficiency to..

of the gases dissolved in a liquid, where the parameters change as a function of the composition. The direct relation between the compressibility and the efficiency of the sound erosion is noted. An assumption is expressed that this relation is a consequence of the damping action of the medium.

[Abstracter's note: Complete translation]

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 36103-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/GD

ACC NR: AT6013178 (A) SOURCE CODE: UR/0000/61/000/000/0021/0031

AUTHORS: Koshkin, N. I.; Obraztsov, V. I.; Yakovlev, V. F.

ORG: none

39
B+1

TITLE: Continuous ultrasonic method for cleansing microwire

SOURCE: Moscow. Oblastnoy pedagogicheskiy institut. Primeneniye ul'trakustiki k issledovaniyu veshchestva, no. 14, 1961, 21-31

TOPIC TAGS: fine wire, fine wire technology, insulated wire, ultrasonic cleaning, ultrasonic application, microwire

ABSTRACT: A continuous ultrasonic method for cleansing microwires is presented. The method was developed by the Laboratory of Molecular Acoustics MOPI imeni N. K. Krupskaya (Laboratoriya molekulyarnoy akustiki MOPI) at the request of the Moscow Transmission Cables Industry. A schematic of the experimental installation is presented. The best results were obtained with a frequency of 700--1000 kilocycles and a power expenditure of 2--4 w/cm^2. The experimental results are tabulated (see Table 1). The use of common organic solvents as the working liquid was quite satisfactory and in some cases, when the level of natural oils on the surface of the wires was relatively low, ordinary tap water could be used as the working liquid.

Card 1/2

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No. of reel*	Average number of point defects in the insulation of a 15-m specimen	
	without ultrasound	with ultrasound
1	5,000	1,300
2	1,129	0,726
3	12,210	0,230
4	25,000	0,500
5	2,120	0,000
6	1,470	0,600
7	3,703	0,367
8	0,433	0,133

* Each reel had 800--1000 m wire

Table 1. Results of determination of point defects of enameled constantan wire of 0.15 mm diameter.

Orig. art. has: 2 tables and 5 figures.

SUB CODE: 14, 13, 20/SUBM DATE: 22Apr61

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 45800-66 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AR6023309 SOURCE CODE: UR/0058/66/000/003/H072/H072

AUTHOR: Obraztsov, V. I.

56
B

TITLE: Some results on the physico-chemical principles of the process of ultrasonic cleaning 16

SOURCE: Ref zh. Fizika, Abs. 3Zh502

REF. SOURCE: Tr. 1-y Mezhvuz. nauchn. konferentsii po primeneniyu molekul. akust. k issled. veshchestva i v nar. kh-ve. Tashkent, 1964, 253-258

TOPIC TAGS: ultrasonic cleaning, temperature dependence, fluid viscosity, cleaning fluid, cavitation, ultrasound absorption, liquid property

ABSTRACT: The author discusses the influence of temperature and viscosity of the liquid, and also the solubility of gases in it, on the rate of collapse of cavitation bubbles. A connection is established between the intensity of the pressure wave radiated by the cavitation bubbles and the number of bubbles per unit volume of the liquid, and also between the intensity of the sound on the surface of the source and the coefficient of absorption of sound by the liquid. Attention is called to the need

Card 1/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 45800-66
ACC NR: AR6023309

for taking into account the effect of sound on the physico-chemical properties of the liquid in which cleaning takes place and other processes connected with cavitation. V. Akulichev. [Translation of abstract]

SUB CODE: 20

Card 2/2 JS

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 45803-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/DJ

ACC NR: AR6023308 SOURCE CODE: UR/0058/66/000/003/H072/H072

AUTHOR: Yakubov, L. M.; Urunbayev, I. A.; Obraztsov, V. I.

TITLE: Dependence of the efficiency of ultrasonic degreasing on the value of the surface tension of the working liquid

SOURCE: Ref zh. Fizika, Abs. 3Zh501

REF. SOURCE: Tr. 1-y Mezhvuz. nauchn. konferentsii po primeneniyu molekul. akust. k issled. veshchestva i v nar. kh-ve. Tashkent, 1964, 259-262

TOPIC TAGS: ultrasonic dewaxing, ultrasonic cleaning, surface tension, cleaning fluid

ABSTRACT: Results are presented of experimental measurements of the surface tension of a liquid (distilled water or 3% solution of trisodium phosphate), and also the efficiency with which a layer of lubricating material (bleached oil, commercial vaseline) could be removed from glass following different times of exposure to ultrasound of 22.5 kcs frequency. The hypothesis is advanced that there is a possible quantitative relation between the efficiency of degreasing and the change in surface tension. V. Akulichev. [Translation of abstract]

SUB CODE: 20

Card 1/1

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 10084-67 EWT(m)/EWP(j)/EWP(k) MW/JW/RM

ACC NR: AT6026364 SOURCE CODE: UR/3209/66/000/001/0022/0027

AUTHOR: Obraztsov, V. I. (Candidate of physico-mathematical sciences); Sotnik, B. F. (Aspirant)

ORG: none

TITLE: Some experiments on increasing the actual stability of liquids

SOURCE: Ukraine. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya. Mezhvedomstvennyy respublikanskiy nauchno-tekhnicheskiy sbornik, 1966. Akustika i ul'trazvuk (Acoustics and ultrasonics), no. 1, 22-27

TOPIC TAGS: ultrasonic vibration, liquid state, vapor pressure, boiling point, crystallization, solid phase, wettability, surface property

ABSTRACT: The influence of ultrasonic waves on the actual stability of various liquids over time periods up to 280 min was studied according to the method of Pease and Blinks. In this approach, ultrasonic waves agitate the liquid at the saturation pressure of the vapors and the results are given as the degree of superheat in the individual liquid. Experiments were conducted at constant temperature and at a gradual heating rate up to the boiling point of the liquid. The absolute superheat values ranged from 0 to 29°C for 12 different liquids. The ratio of absolute superheat to the difference between the boiling temperature and the crystallization temperature ranged from 0 to 0.39. With

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L 10084-67

ACC NR: AT6026364

the exception of benzol (0.39) this ratio was relatively constant for all of the liquids (0.07 to 0.16). Some experiments were done to test the effect of finely dispersed insoluble phases on the above results. Metal chips and 2,4-dinitrophenyl hydrazine particles were added to tolyl, methyl alcohol, benzol, and ethyl ether. The absolute values of superheat did not change except for benzol. The decrease from 14 to 2°C for benzol was caused by the weak wettability of the addition (2,4-dinitrophenyl hydrazine). After the ultrasonic treatment, the test was stopped so that the liquids could be exposed to the free atmosphere, and the ultrasonic experiments were repeated; there was no change in the final results. Since the ultrasonic waves remove gases from solution, the soluble gas introduced by stopping the treatment did not affect the actual stability of the liquids. Based on these results, the experiments of Pease and Blinks on solutions of crystallizing substances were analyzed. It was concluded that cavitation occurs if the crystallizing substance has a highly wettable surface; however, this happens not because of the formation of stable surfaces as postulated by Pease and Blinks, but because of disturbances of continuity in microvolumes, which turn into cavitation centers. Orig. art. has: 3 tables.

SUB CODE: 20/ SUBM DATE: none/ OTH REF: 004

Card 2/2 bp

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. I., and MAREK, D. P.

"Some Traffic Capacity Problems Relating to Automobile Roads." Symposium. "Problems in Increasing the Efficiency of Transportation." Academy of Sciences USSR, Section on Scientific Solution of Transportation Problems, Academy of Sciences USSR, 1949.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. I., MAREK, D. P., NADEZHIN, S. P., SOKOVICH, V. A., and SHAUL'SKIY, F. I.

"Importance of a Unified Technological Process in Railroad Transportation and Method of Procedure." Edited by Academician V. N. Obraztsov, Academy of Sciences USSR. (Section on Scientific Solution of Transportation Problems, Academy of Sciences USSR, 1949, 160 pp, 1,500 copies.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. I.,

"Theoretical Principles of Traffic Capacity." Symposium. "Problems in Increasing the Efficiency of Transpotyayion." Academy of Sciences USSR, Section on Scientific Solution of Transportation Problems, Academy of Sciences USSR, 1949.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. I.

Obraztsov, V. I., Marek, D. P., Nadezhin, S. P., Sokovich, V. A., and Shaul'skiy, F. I., "Importance of a Unified Technological Process in Railroad Transportation and Method of Procedure." Edited by Academician V. N. Obraztsov, Academy of Sciences USSR. (Section on Scientific Solution of Transportation Problems, Academy of Sciences USSR, 1949, 160 pp, 1,500 copies.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. I.

Obraztsov, V. I., and Marek D. P., "Some Traffic Capacity Problems Relating to Automobile Roads." Symposium. "Problems in Increasing the Efficiency of Transportation." Academy of Sciences USSR, Section on Scientific Solution of Transportation Problems, Academy of Sciences USSR, 1949.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. I.

Obraztsov, V. I., "Theoretical Principles of Traffic Capacity." Symposium. "Problems in Increasing the Efficiency of Transportation." Academy of Sciences USSR, Section on Scientific Solution of Transportation Problems, Academy of Sciences USSR, 1949.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.L.

KORMSHCHIKOV, P.A., prof.; OBRAZTSOV, V.L., assistent; ZVEREVA, M.I., assistent.

Results of vitaminizing pregnant cows and newborn calves on the "Trinadtsat' let oktiabria" Collective Farm. Zhivotnovodstvo 19 no.12:68-70 D '57. (MIRA 10:12)

1.Troitskiy zooveterinarnyy institut.
(Calves) (Vitamins)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.N., akademik

Role and importance of standardization in industrial production. Standartizatsiia 29 no.8:26 '65. (MIRA 18:10)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OVRAKTSOV, V. P.

"Symptomatology and Diagnosis of Thrombosis of the Coronary Arteries," Klin. Med., 27, No. 11, 1949. Prof., Kiev, [illegible].

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OSTASHEVSKIY, A.G.; OBRAZTSOV, V.P.; KOTENKO, I.I.

Biological properties of staphylococci isolated from animals in some diseases. Vop. pit. 19 no.3:69-73 My-Je '60. (MIRA 14:3)

1. Iz kafedry mikrobiologii i veterinarno-sanitarnoy ekspertizy (zav. - zasluzhennyy deyatel' nauki USSR prof. M.V.Revo) Khar'kovskogo veterinarnogo instituta.
(STAPHYLOCOCCUS) (VETERINARY MEDICINE)
(MEAT INSPECTION)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OSTASHEVSKIY, A.G.; OBRAZTSOV, V.P.

Sensitivity of white mice to pathogenic staphylococci following various methods of infection. Lab. delo 7 no.2:57-58 F '61. (MIRA 14:1)

1. Kafedra mikrobiologii i veterinarno-sanitarnoy ekspertizy (zav. - prof. M.V.Revo) Khar'kovskogo veterinarnogo instituta.
(STAPHYLOCOCCUS)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

87991

S/144/60/000/011/007/008
E140/E255

6.9000

AUTHOR: Obraztsov, V. V., Assistant

TITLE: Theory of the Incomplete Parameter-Shift Code

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1960, No. 11, pp. 98-103

TEXT: The parameter-shift code was first published in the Soviet Union by Shchukin(Ref 1) in 1945, in connection with remote control problems. The essential feature of these codes appears to be that the particular parameter (not necessarily amplitude) which is varied is used in a non-return-to-zero mode. In other words successive elements of a code character use different levels of the parameter in question. Shchukin considered codes with an identical number of positions in each character; the present paper considers the codes consisting of variable-length characters (see Table 1 on p. 101). A graphical method is given for determining all permissible code combinations for a given number of decoder relays activated by the levels of the various modulated parameters. Examples of modulated parameters can be the presence or absence of given subcarrier frequencies or phases. The

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

87991

S/144/60/000/011/007/008
E140/E255

Theory of the Incomplete Parameter-Shift Code

parameters are not present simultaneously; the symbols in Table 1 indicate serial transmission of the corresponding parameters. The problem of punctuation, i.e. separation of the serially-transmitted code (e.g. a_1, a_1b_1, $a_1b_1a_2$, etc.) is not discussed. There are 4 figures, 1 table and 5 references: 4 Soviet and 1 non-Soviet.

ASSOCIATION: Kafedra avtomaticheskikh i izmeritel'nykh ustroystv, Novocherkasskiy politekhnicheskiy institut (Department of Automatic and Measuring Devices, Novocherkassk Polytechnic Institute)

SUBMITTED: July 4, 1960

Card 2/3

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

87991

S/144/60/011/007/008
E140/E255

Theory of the Incomplete Parameter-Shift Code

Table 1

№№ п/п	Codes	№№ п/п	Codes	№№ п/п	Codes	№№ п/п	Codes
1	a_1	11	$a_1b_1a_2$	21	$a_1b_1c_1a_2$	31	$b_1a_2b_2c_2$
2	b_1	12	$a_1c_1a_2$	22	$a_1b_1c_1b_2$	32	$c_1a_2b_2c_2$
3	c_1	13	$a_1c_1b_2$	23	$a_1b_1a_2b_2$	33	$a_1b_1c_1a_2b_2$
4	a_1b_1	14	$b_1c_1a_2$	24	$a_1b_1a_2c_2$	34	$a_1b_1c_1a_2c_2$
5	a_1c_1	15	$b_1c_1b_2$	25	$a_1c_1a_2b_2$	35	$a_1b_1c_1b_2c_2$
6	b_1c_1	16	$b_1a_2b_2$	26	$a_1c_1a_2c_2$	36	$a_1b_1a_2b_2c_2$
7	b_1a_2	17	$b_1a_2c_2$	27	$a_1c_1b_2c_2$	37	$a_1c_1a_2b_2c_2$
8	c_1a_2	18	$c_1a_2b_2$	28	$b_1c_1a_2b_2$	38	$b_1c_1a_2b_2c_2$
9	c_1b_2	19	$c_1a_2c_2$	29	$b_1c_1a_2c_2$	39	$a_1b_1c_1a_2b_2c_2$
10	$a_1b_1c_1$	20	$c_1b_2c_2$	30	$b_1c_1b_2c_2$		

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, VSEVOLOD VLADIMIROVICH, assistent

Method for designing switching circuits with a small number of contacts. Izv. vys. ucheb. zav.; elektromekh. 4 no.6:70-75 '61. (MIRA 14:7)

1. Kafedra avtomaticheskikh i izmeritel'nykh ustroystv Novocherkasskogo politekhnicheskogo instituta.
(Switching theory)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V. V.

"Two-terminal diode networks"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (IFAC), Moscow, 24 Sep-2 Oct 1962.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, Vsevolod Vladimirovich, assistent

A graphical method for minimizing the number of elements in relay devices with diodes. Izv. vys. ucheb. zav.; elektromekh. 5 no.11:1265-1273 '62. (MIRA 16:1)

1. Kafedra avtomaticheskikh i izmeritel'nykh ustroystv Novocherkasskogo politekhnicheskogo instituta.

(Electric networks) (Electric relays)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.V.

Programming network of an n-step technological process with n + 1 devices and one contact from each element. Trudy NPI 124:41-52 '62. (MIRA 15:11)
(Electric networks) (Switching theory)
(Automatic control)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, V.V.

The UT-TS variable quality coding device with few contactors and incomplete combination elements. Trudy NPI 124:61-67 '62. (MIRA 15:11)
(Remote control—Equipment and supplies)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

S/020/63/149/004/014/025
B104/B186

AUTHOR: Obraztsov, V. V.

TITLE: Two-pole diode networks

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 4, 1963, 831 - 834

TEXT: Two-pole diode networks are investigated which allow a further decrease in the number of contacts in relay structures compared with those made up of single-pole diodes. Two-pole diode networks are networks in which the final control elements are connected to both poles of the feeding source and each of them is controlled through a diode network by not fewer than two reacting units. Two restrictions on the structure of such networks are discussed. The first is defined by theorem 1: a complete two-diode network which is constructed according to the reduced form of the structure formula needs for single reacting units each intermediate and final control element. The second restriction is that not more than two reacting units can be connected

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

S/020/63/149/004/014/25
B104/B186

in series with two groups of final circuits connected in parallel. There are four advantages. The first is defined by theorem 2: a complete two-pole diode network gives a reduction from one to (n-1) diode resistors compared with single-pole networks, where n is the number of final networks. The second advantage is that two-pole diode networks make it possible to construct a greater number of structures with a single symbol for each element than is possible with a single-pole network. Third: the switching properties are improved. Fourth: two-pole diode networks have fewer parametric restrictions. There are 2 figures.

PRESENTED: June 23, 1962, by V. S. Kulebakin, Academician

SUBMITTED: June 23, 1962

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 45652-65
ACCESSION NR: AP5013166 UR/0144/64/000/012/1470/1474 15 B

AUTHOR: Zaikin, V. M.; Obrazt sov, V. V.

TITLE: Characteristics of the synthesis of multi-contactor relay systems with contactless asynchronous elements

SOURCE: IVUZ. Elektromekhanika, no. 12, 1964, 1470-1474

TOPIC TAGS: electric relay, semiconductor device, electromagnetic component

Abstract: The article deals with the characteristic features of synthesizing mutli-contact relay systems with contactless elements such as diode-transistor devices. The instability conditions are analyzed and also the transition from one state to the other. The operation of electromagnetic relays is described first, then that of semiconductor logic devices. A few schemes of sequential switching are shown and explained.
Orig. art. has 5 figures and 8 formulas.

ASSOCIATION: none

SUBMITTED: 03Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 007 OTHER: 001 JPRS

Card 1/1 me

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

ZAIKIN, Veniamin Mikhaylovich, inzh.; OBRAZTSOV, Vsevolod Vladimirovich, kand.tekhn.nauk, dotsent

Special features of the synthesis of multicycle relay systems with contactless asynchronous elements. Izv.vys.ucheb.zav.; elektromekh. 7 no.12:1470-1474 '64. (MIRA 18:2)

1. Gidrofizicheskiy institut AN UkrSSR (for Zaikin). 2. Kafedra avtomatiki i telemekhaniki Novocherkasskogo politekhnicheskogo instituta (for Obraztsov).

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

ACC NR: AT6014291 SOURCE CODE: UR/0000/65/000/000/0052/0059

AUTHOR: Obraztsov, V. V. (SSSR)

ORG: none

TITLE: Two-pole rectifier gate networks

SOURCE: International Symposium on the Theory of Relay Systems and Finite Automata. Moscow, 1962. Sintez releynykh struktur (Synthesis of relay structures): trudy simpoziuma. Moscow, Izd-vo Nauka, 1965, 52-59

TOPIC TAGS: electric network, remote control system

ABSTRACT: A two-pole network is a diode (rectifier) network in which the contacts (or their equivalents) are situated at both poles of the supply source, the response devices are situated inside the structure, and at least one response device is connected in series with at least two contacts situated at different supply poles. With the above definition, these theorems are proven: (1) A complete two-pole diode network having a bracket-form structure requires, for each inter-

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

ACC NR: AT6014291

mediate and actuating (final) element, separate response devices whose number is equal to the number of conjunctive terms describing the element; (2) The two-pole diode network, as compared to the single-pole network, requires 1 to n−1 less diodes and resistors per each response device, where n is the number of terminating branches in the corresponding term. Structures of a remote-control transmitter-receiver and distributor are shown in the form of two-pole networks. It is claimed that the two-pole diode networks, "as more economical," will find wide practical usage. "In conclusion, the author wishes to thank Professor M. A. Gavrilov .... for his help, and Doctor of Technical Sciences V. N. Roginskiy for his valuable comments." Orig. art. has: 4 figures and 5 formulas.

SUB CODE: 09/3/ SUBM DATE: 27Aug65 / ORIG REF: 007 / OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

L 44755-65 EWT(d)/T/EED-2/EWP(1) Pg-4/Pj-4/Pk-4/Pq-4 IJP(c) GG/BB

ACCESSION NR: AP5007249 S/0280/65/000/001/0045/0050

35
B

AUTHOR: Obraztsov, V. V. (Novocherkassk)

TITLE: Few-element decoders 16

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 1, 1965, 45-50

TOPIC TAGS: decoder, decoder synthesis

ABSTRACT: In synthesizing decoders, an essential saving of elements may be achieved by combining the author's two-side diode-network method (Dokl. AN SSSR, 1963, v. 149, no. 4) with D. R. Brown and N. Rochester's subdivision of individual terms of the structural formula into groups (Proc. IRE, 1949, no. 2). A possible 30—70% saving of diodes and resistors is claimed. An algorithm for synthesizing such a "few-element" decoder is formulated, and its realization for the case of a binary decoder with transistor switching elements is considered. The saving is possible thanks to these two factors: (1) Two types of coincidence

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L 44755-65
ACCESSION NR: AP5007249

circuits (high-potential and low-potential), each requiring only one diode, are used; (2) The load circuit is connected instead of the output coincidence circuits which are dispensed with. Orig. art. has: 4 figures and 7 formulas.

ASSOCIATION: none

SUBMITTED: 16Apr64 ENCL: 00 SUB CODE: DP

NO REF SOV: 004 OTHER: 001

GJR

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

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L 64155-65 EWT(d)/EED-2/EWP(1) IJP(c) BB/GG

ACCESSION NR: AP5016313 UR/0144/65/000/005/0586/0589
621—52 621.385.2

15
B

AUTHOR: Obraztsov, V. V. (Candidate of technical sciences, Docent)

TITLE: Economical binary-decimal code diode converters

SOURCE: IVUZ, Elektromekhanika, no. 5, 1965, 586-589

TOPIC TAGS: code converter, binary decimal code converter

ABSTRACT: The system of transmission of a decimal-code data by a binary code and conversion of the binary code into decimal code on the receiving end has conventionally used diode-matrix-type encoders and decoders. The article suggests that a simpler diode network, one of those employed in the relay engineering, be used instead. The suggestion may save up to 50% diodes in some cases. Circuits and formulas comparing the two systems are supplied. Orig. art. has: 3 figures and 9 formulas.

ASSOCIATION: Frunzenskiy politekhnicheskiy institut (Frunze Polytechnic Institute)

SUBMITTED: 23Jan65 ENCL: 00 SUB CODE: DP

NO REF SOV: 006 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

PIROGOV, Andrey Andreyevich; NAZAROV, M.V., retsenzent; LEV, A.Yu., retsenzent; OBRAZTSOVA, Ye.A., red.; TRISHINA, L.A., tekhn. red

[Synthetic telephony] Sinteticheskaia telefoniia. Moskva, Sviaz'izdat, 1963. 118 p. (MIRA 16:7)
(Telephone) (Speech)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

LUR'YE, Boris Yakovlevich; ABOLITS, I.A., otv. red.; OBRAZTSOVA, Ye.A., red.

[Design of transistor amplifiers with direct feedback] Proektirovanie tranzistornykh usilitelei s glubokoi obratnoi sviaz'iu. Moskva, Sviaz', 1965. 149 p. (MIRA 18:5)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

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L 18247-65 EWT(1)/EWG(k)/EPR/EEC(b)-2 Pz-6/Ps-4 IJP(c)/AFWL/AS(mp)-2/
SSD/RAEM(a)/ASD(a)-5/ESD(ga)/ESD(t) AT

ACCESSION NR: AP5000660 S/0181/64/006/012/3620/3625

AUTHORS: Ansel'm, A. I.; Obraztsov, Yu. N.; Tarkhanyan, R. G.

TITLE: Contribution to the quantum theory of thermomagnetic phenomena in semiconductors

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3620-3625

TOPIC TAGS: quantum theory, thermomagnetic phenomenon, semiconductor band structure, indium antimonide, conduction electron, diamagnetism

ABSTRACT: It is shown that the expression $\alpha = -s/e$ (α -- differential thermal emf, s -- entropy per electron, e -- electron charge), derived for a standard (parabolic) band by a quantum method developed by one of the authors (Ansel'm with B. M. Askerov, FTT v. 2, 2310, 1960), can be obtained from kinetic considerations also for the case of a non-parabolic band of the n-InSb type. This is done by adding

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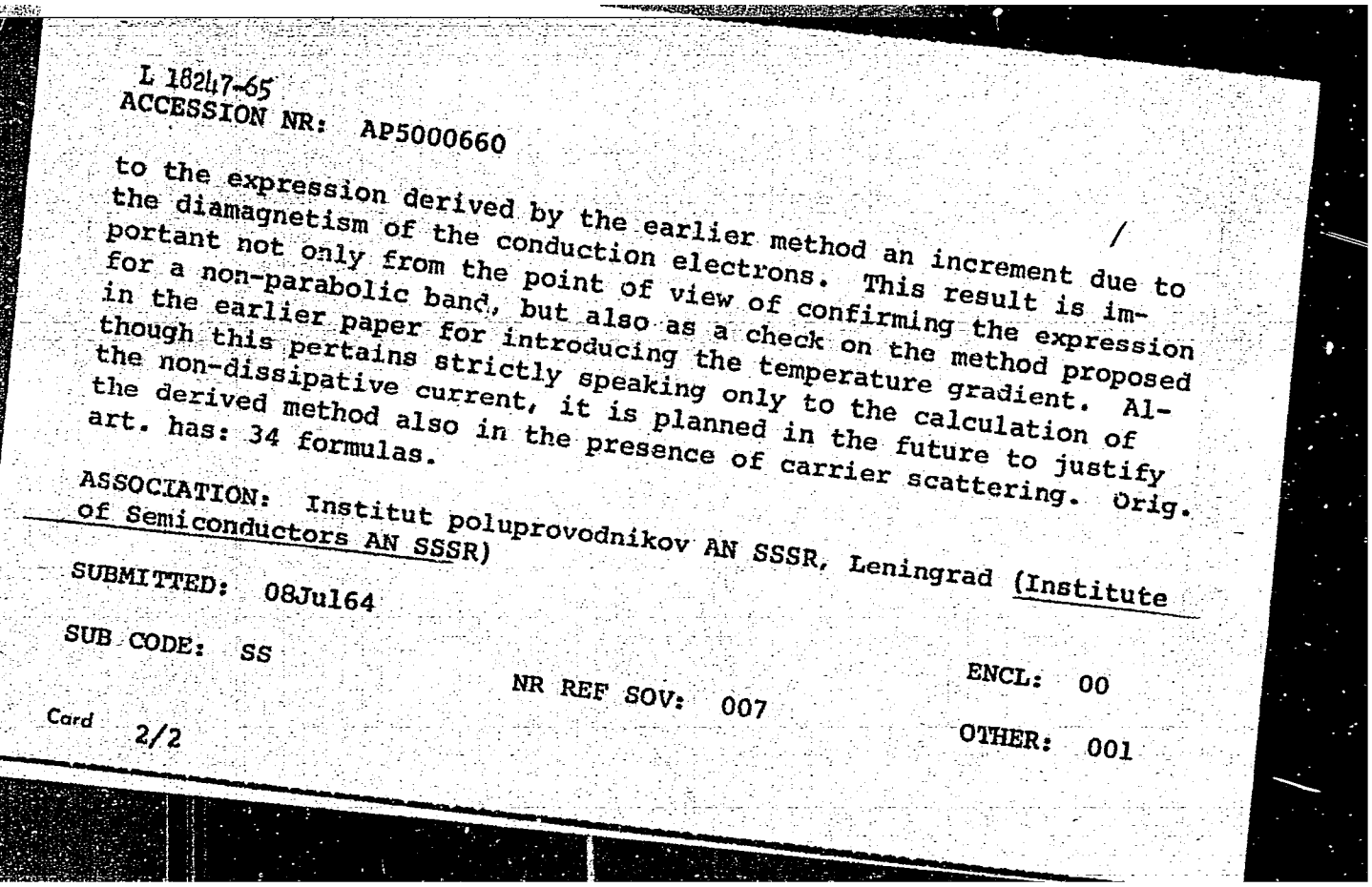

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ACCESSION NR: AP5000660

to the expression derived by the earlier method an increment due to the diamagnetism of the conduction electrons. This result is important not only from the point of view of confirming the expression for a non-parabolic band, but also as a check on the method proposed in the earlier paper for introducing the temperature gradient. Although this pertains strictly speaking only to the calculation of the non-dissipative current, it is planned in the future to justify the derived method also in the presence of carrier scattering. Orig. art. has: 34 formulas.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors AN SSSR)

SUBMITTED: 08Jul64

SUB CODE: SS

NR REF SOV: 007

ENCL: 00

OTHER: 001

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

COMMON ELEMENTS

CA 2

Influence of [illegible] on the dispersion of x-rays by mixed crystals. V. [illegible]. J. Exptl. Theoret. Phys. (U. S. S. R.) [illegible] ([illegible]).—Theoretical-math. A diffusion ring is obtained just as in the case of liquids.

F. H. Rathmann

COMMON VARIABLES INDEX

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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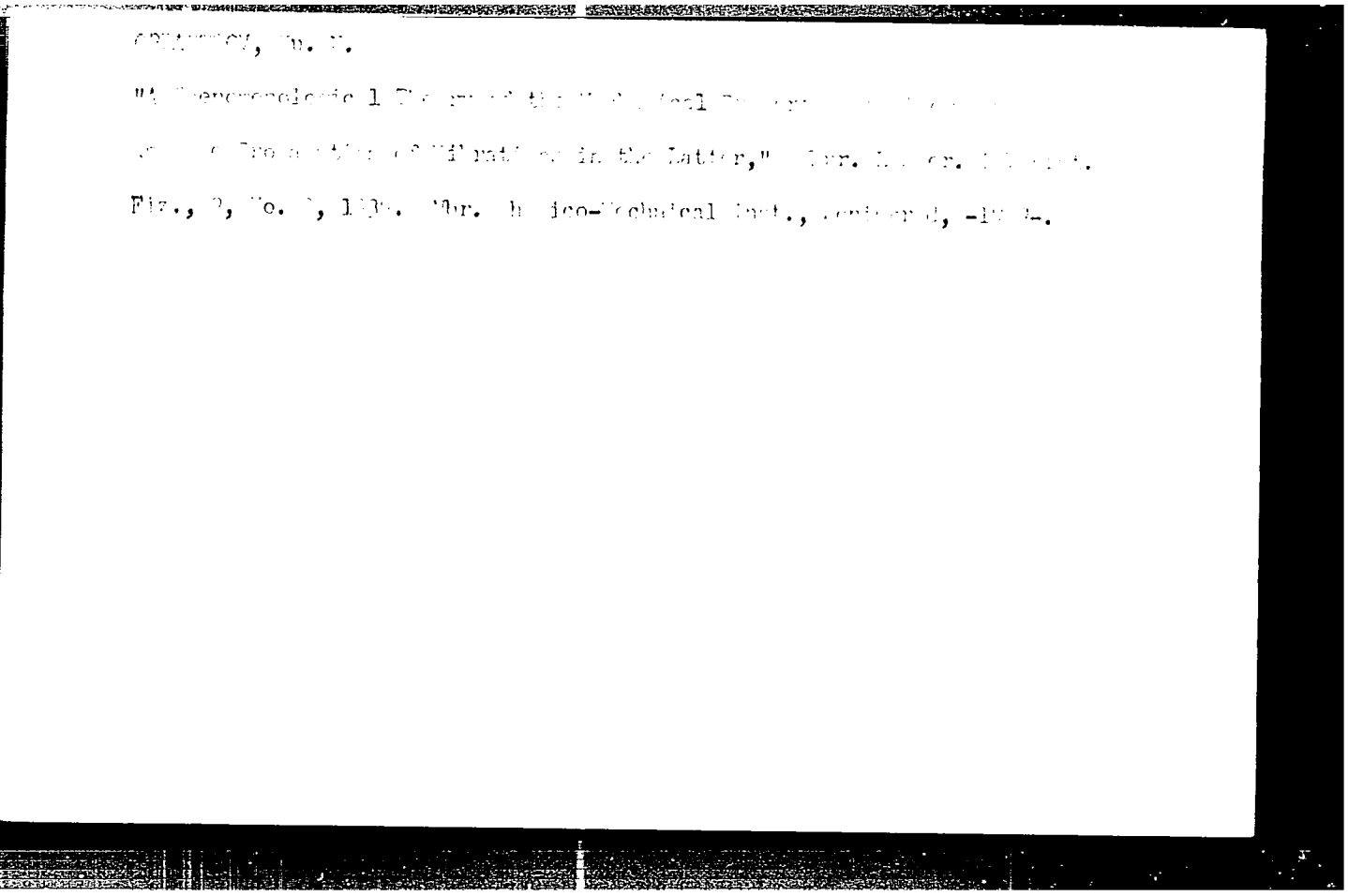

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

OBRAZTSOV, Yu. N.

USSR/Physics - X-ray background

"Computation of Intensity of X-Ray Background at Various Correlation Degrees of Solid Solutions," Yu. A. Izyumov, Yu. N. Obraztsov

DAN SSSR, Vol 93, No 1, pp 35-38 - 1953

Attempts to solve problems of scattering of X-rays in solids in order to obtain the same results found by I. M. Lifshits (ZhETF 9, 4(1939)) and Yu. N. Obraztsov (ZhETF 9, 5 (1938)) for the one dimensional case with chain atoms in the absence of distant order. Presented by Acad I. P. Bardin 1 Sep 53.

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USSR/Physics - Semiconductors

FD-3135

Card 1/1 Pub. 153 - 4/24

Author : Obraztsov, Yu. N.

Title : Nernst effect in atomic semiconductors taking account of scattering of electrons and holes on admixture ions

Periodical : Zhur. tekh. fiz., 25, No 6 (June), 1955, 995-1002

Abstract : The author calculates the isothermal coefficient of Nernst for atomic semiconductors in the presence of both electrons and holes taking into account their scattering on admixture (impurity) ions. He discusses the temperature dependence of the effect in the presence of two kinds of current carriers. He notes that a comparison of theory with results of measurements of the Nernst constant for tellurium is given in the work of I. V. Mochan (ibid., 25, No 6 (June), 1955, 1003-1012; see next abstract). He thanks A. I. Ansel'm and I. V. Mochan. Eight references: e.g. K. B. Tolpygo, Trudy Inst. fiz. AN USSR, No 3, 52, 1952.

Institution :

Submitted : January 28, 1955

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

C BRATZOV, Yu N

AUTHOR: OBRAZTSOV,YU.N.

TITLE: Some Peculiarities of the Thermodynamics of Phonon- and Electron Gases in a Solid. (Nekotoryye osobennozti termodinamiki fononnogo i elektronnogo gaza v tverdom tle, Russian).

PA - 2351

PERIODICAL: Izvestiia Akad. Nauk SSSR, Ser. Fiz., 1957, Vol 21, Nr 1, pp 97 - 111 (U.S.S.R.).

Received: 4 / 1957 Reviewed: 5 / 1957

ABSTRACT: The application of the known thermodynamic relations to the above mentioned case seems at first to be justified, but it leads to some paradoxes. The author at first examines the temperature dependence of the chemical potentials of the electrons in an electron semiconductor at a temperature near absolute zero. According to the computations of the author the occurrence of even one electron in the conductivity zone changes the pressure by one finite order. At T —>0 the differential thermoelectric force must tend towards infinity, but according to NERNST's theorem it tends towards zero. Analogous paradoxa also occur in connection with the thermodynamics of phonon gas. Thus, an apparently wrong expression for the pressure of the phonon is obtained.

The paradoxa mentioned here result from a wrong application of thermodynamic relations which assume the additivity of thermodynamic functions in certain systems. All this is explained here

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Some Peculiarities of the Thermodynamics of Phonon- and Electron Gases in a Solid.

in detail. The nonadditivity of free energy leads, for instance, to the occurrence of an additional term in the formula for pressures. This additional term is connected with the dependence of eigenfrequencies on interatomic distances.

ASOCIATION: Institute for Semiconductors of the Academy of Science of the U.S.S.R.

PRESENTED BY:

SUBMITTED:

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Card 2/2

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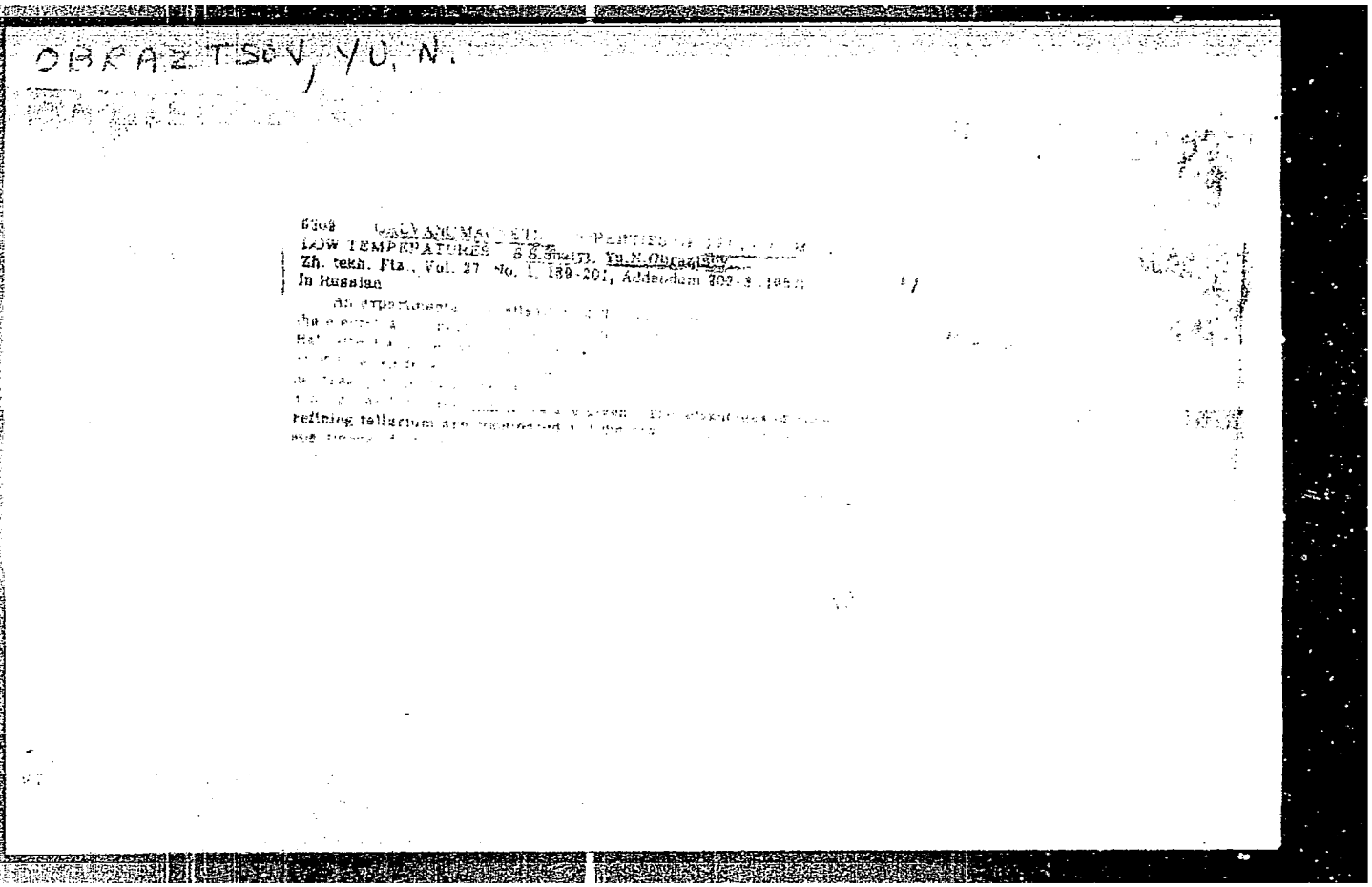

OBRAZTSOV, YU. N.

LOW TEMPERATURES
Zh. tekh. Fiz., Vol. 27 No. 1, 189-201, Addendum 202-3 (1957)
In Russian

refining tellurium

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

AUTHOR: MOCHAN,I.V., OBRATZSOV.JU.N., KRYLOVA,T.V., PA - 2119

TITLE: The Investigation of thermomagnetic effects in hole-germanium. (Issledovaniye termomagnitnykh effektov u dyrochnogo germaniya Russian).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 2, pp 242 - 259 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: The longitudinal and transverse effects of Nernst-Ettinghausen and the Hall effect in Hall germanium (p-germanium) were investigated within the domain of admixture conductivity. Investigations were based on the general assumption of the arbitrary dependence of the relaxation times $\tau^{(2)}$ and $\tau^{(1)}$ and the heavy holes of the energy ε, while all other assumptions made by the paper of Willardson-Harman-Beer, Phys.Rev.,96,1512, 1954 were retained. The equations for Hall's constant R(H), for the constant of the transverse effect of Nernst-Ettinghausen Q(H) and for the modification of the thermoelectromotoric force α on the magnetic transverse field $\Delta\alpha = \alpha(H) - \alpha(C)$ are set up. According to the formulae derived curves are computed and attached. The relation of the concentration $u \sim T^{-2,5}$ which is a near approach to the experiments, is obtained on the assumption that $\tau \sim \frac{1}{\varepsilon^{3/2}}$. The criteria then derived show that, if the last mentioned formula is correct, the dependence of galvanometric and thermomagnetic effects on the magnetic field should occur in the case of much weaker fields

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The Investigation of thermomagnetic effects in hole-germanium.

then would follow from the ordinary criterium. Experiments were carried out on a sample of p-germanium the specific resistance of which amounted to 69 ohm.cm at room temperature. All measurements were carried out according to the compensation method. The next chapter enumerates and discusses measuring results, The corresponding curves are attached.

Measuring of the thermomagnetic transversal effect of Nernst-Ettinghausen in hole-germanium of high frequency showed a considerable dependence of the Nernst constant on the magnetic field in the interval of temperatures of admixture conductivity of from 80 to 240°K in fields of up to 5000 gauss. In dependence on the field the effect changes its sign at the field value of H_o (i.e. the value at which $Q(H)$ becomes zero in the case of every temperature). The quantity $\frac{1}{H_o}$ changes with temperature proportionally to $T^{-2.3}$, i.e. this change is proportional to the mobility u_1 of the heavy holes as is predicted by theory. The measured dependence of Q on temperature and on the magnetic field can be expressed as follows: $Q = T^{-4} f\left(\frac{u_1 H}{c}\right)$, where f, at a given value $\frac{u_1 H}{c}$, is independent of temperature

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The Investigation of thermomagnetic effects in hole-germanium.

(H is the voltage of the magnetic field, c the velocity of light). The character of the dependence obtained can be thoeretically derived on the assumption that in the temperature interval given the transversal effect by Nernst-Ettinghausen is determined entirely by the process of hole capture by phonons. As measurements have shown, capture by phonons exercises no influence on the amount of the change of thermoelectromotoric force in the magnetic field in the case of weak magnetic fields. In the case of stronger magnetic fields part of the change of thermoelectromotoric force in the magnetic field (determined by the capture effect) is comparable with that part which is determined by the ordinary process. The quantities of mobilities obtained from the inclination of the tangents at the curves of the dependence of $\Delta\alpha$ on H^2 at the point $H = 0$ are, according to their absolute value, near Hall's mobilities and change with temperature (proportional to $T^{-2.5}$). The absolute values of mobilities agree with the values of drift mobility which were mentioned in the paper by Prince, Phys.Rev., 91, 208, 1953. (15 illustrations).

Card 3/3

ASSOCIATION: Institute for Semiconductors of the Academy of Science of the U.S.S.R., Leningrad

SUBMITTED: 2.8.1956

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

СВКНАЗЧОВ Ю. Н.

57-27-7-6/40

AUTHORS: Moyzhes, B. Ya., Obraztsov, Yu. N.

TITLE: On the Theory of the Transversal Photomagnetic Effect (K teorii poperechnogo fotomagnitnogo effekta)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 7, pp. 1446 - 1453 (USSR)

ABSTRACT: The field voltage and the short-circuit current of the transversal photomagnetic effect discovered in 1934 by Kikoin and Noskov and described in 1956 in Doklady AN SSSR, 109, 735 is calculated here. The attempt is made to explain the formation of this effect and the different course of the curves for n- and p-germanium. A hole-semiconductor is assumed and it is also assumed that the relaxation time does not depend on the energy. This leads to much simpler formulae. The formulae for the field voltage are derived for the ordinary (E_y) photomagnetic effect, for the transversal photomagnetic effect (E_z) and for the voltage of the Dember effect V_x. From the second formula may be seen that in a weak magnetic field the transversal effect is proportional to H^2 (magnetic field), but that in a very strong magnetic field it tends toward saturation. The dependence of the angle on the field direction is determined by the multiplicand $\sin 2\theta$. N-electron-concentration on the illuminated surface. θ - inclination angle of the magnetic field to the

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57-27-7-6/40

On the Theory of the Transversal Photomagnetic Effect

surface of the plate. This formula obtained here for E_z is in contradiction to the test results obtained by Kikoin and Bykovskiy (Doklady AN SSSR, 1956, 109, 735), where upon enlargement of the magnetic field a change of sign of E_z was observed in the case of p-germanium. It is shown that in the case of a degeneration of the hole-zones, in case that two types of holes (rapid and slow ones) are present, the effect-sign in a hole-sample may change when H increases. There are 2 figures and 6 references, 4 of which are Soviet.

ASSOCIATION: Institute for Semiconductors AS USSR, Leningrad
(Institut poluprovodnikov AN SSSR, Leningrad)

SUBMITTED: December 29, 1956

AVAILABLE: Library of Congress

1. Semiconductors-Photomagnetic effect-Mathematical analysis
2. Photomagnetic effects-Theory 3. Germanium-Applications

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

USSR/Electricity - Semiconductors G-3

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 1370

Author : Gurevich, V.L., Obraztsov, Yu.N.

Inst : Institute of Semiconductors, Academy of Sciences, USSR, Leningrad.

Title : Influence of Entrainment of Electrons by Phonons on the Thermal Magnetic Effects in Semiconductors.

Orig Pub : Zh. eksperim. i teor. fiziki, 1957, 32, No 2, 390-392

Abstract : The authors take into account the influence of the entrainment of electrons by phonons on the transverse and longitunal effect of Nernst-Ettinghausen (N-E) in semiconductors. It is assumed from these calculations that the distribution functions of the electrons and of the phonons deviate little from their equilibrium values. The constant of the transverse and longitudinal N-E effect are derived with

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Abs Jour : Ref Zhur - Fizika, No 1, 1958, 1370

allowance for the entrainment effect. It is shown that the entrainment influence is considerably more strongly the H-E effect than the thermal emf. The resultant conclusions are correct (with suitable change of signs) also for holes. The available experimental data (on p-Ge) are in good agreement with the theoretical formulas, taking into account the degeneracy of the valence zone of the germanium (the presence of two kinds of holes).

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

57-2-6/32

AUTHOR: Obraztsov, Yu. N.

TITLE: Concerning the Method of Drift Speed (K voprosu o metode dreyfovoy skorosti).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 2, pp. 245-249 (USSR).

ABSTRACT: The method of drift speed is very convenient for investigating phenomena in thin films and wires and it is very clear. The calculation, however, of the current-density in this manner leads to results which are not in agreement with those according to the solution of the kinetic equation. The causes of this apparent disagreement in the calculation of the current-density by means of the exact solution of the kinetic equation and that according to the method of drift speed are investigated here (for the case where the duration of the free path depends on the speed). It is shown that a correctly performed calculation according to the method of drift speed leads to the correct result in this case, too. The work was discussed with A. I. Ansel'm.
There are 2 non-Slavic references.

ASSOCIATION: Institute of Semiconductors AS USSR. Leningrad (Institut poluprovodnikov
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57-2-6/32

Concerning the Method of Drift Speed.

AN SSSR Leningrad).

SUBMITTED: July 16, 1957.

AVAILABLE: Library of Congress.

1. Electric currents-Density-Mathematical analysis

Card 2/2

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~~24(6), 24(1)~~

AUTHORS: Mochan, I. V., Obraztsov, Yu. N., Smirnova, T. V.

TITLE: Investigation of Interaction of Holes in p-Germanium With Vibrations of the Acoustic Branch

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 9, pp 1351 - 1359 (USSR)

ABSTRACT: The authors investigated the temperature dependence of the phonon part of the thermo-emf α_{ph} and its change in the magnetic field $\Delta\alpha_{ph}$ in germanium. $\alpha_{ph} \sim \frac{\bar{\tau}_{ph}}{\bar{\tau}'_e T}$, where $\bar{\tau}_{ph}$ denotes the averaged free-path time of the phonons interacting with electrons, and $\bar{\tau}'_e$ that of the electrons. As is shown, the investigation of these effects makes it possible to determine the mean free time of the holes τ'_e, corresponding to single-phonon scattering on longitudinal sound vibrations. The experimental setup used for the measurements is discussed on the basis of figure 1. The p-type samples investigated were cut off from one single crystal in the following manner:

Card 1/3

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Investigation of Interaction of Holes in p-Germanium With Vibrations of the Acoustic Branch

1) $[100] \parallel \nabla T$, $[011] \parallel \vec{H}$; 2) $[011] \parallel \nabla T$, $[100] \parallel \vec{H}$; 3) $[110] \parallel \nabla T$, $[111] \parallel \vec{H}$; 4) $[111] \parallel \nabla T$, $[211] \parallel \nabla H$. The n-type sample investigated for comparative purposes was measured in parallel to the temperature gradient which included an angle of 15^0 with the [110] direction. A measurement of the Hall effect yielded equal carrier concentration for all p-type samples ($4.10^{13} cm^{-3}$), for n-Ge $0.9.10^{13} cm^{-3}$. Figures 2 and 3 illustrate the determination results of the temperature dependence of the thermo-emf. Figure 2 shows $\alpha_{ph}(T)$ for p- and n-Ge, figure 3 $\Delta\alpha(T)$ for p-Ge (hyperbolas). From figure 2 it follows $\alpha_{ph} \sim T^{-2.2}$ for p- and n-Ge, in which case (4) is obtained in general: $\frac{\bar{\tau}_{ph}}{\bar{\tau}'_e T} \sim T^{-n}$. The investigation results of the longitudinal thermomagnetic effect at 200 - 5000 Oe are given in 3 diagrams and 1 table. As may be observed from the table, in formula (4) the mean error in n is about 10%. The connection between $\bar{\tau}'_e$

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Investigation of Interaction of Holes in p-Germanium With Vibrations of the Acoustic Branch

and T is near the $\bar{\tau}_e' \sim T^{-3/2}$ required by theory. Consequently, the experimentally observed dependence of the hole mobility in p-germanium can be explained only by assuming some other scattering mechanism to play the principal part, apart from the considered scattering on acoustic vibrations. There might be, for example, scatterings on optical vibrations. There are 6 figures, 1 table, and 20 references, 6 of which are Soviet.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: February 4, 1959

4

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001237720002-7

Obraztsov, Yu. N.

S/181/60/002/05/08/041
B008/B058

AUTHORS: Obraztsov, Yu. N., Mochan, I. V., Smirnova, T. V.

TITLE: The Phononic Transverse Thermomagnetic Nernst Effect in p-Type Germanium

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 5, pp. 830-835

TEXT: The dependence of the phononic part Q_{ph} of the Nernst constant on the magnetic field strength was numerically computed for p-type germanium with regard to the transitions between the bands of light and heavy holes. Further, the authors considered the dependence of the mean free time of the holes τ_{ph} on the wave vector q. These results are compared with the data obtained by the authors for p-type germanium in the temperature range 96-143°K and magnetic fields of up to 5,500 gauss. The curve computed from equation (3) for the ratio between the concentrations of light and heavy holes is shown in Fig. 1, and the dependence of the Nernst constant Q on the magnetic field was measured for comparison (Fig. 3). The effect of contacts on the Nernst voltage measured was eliminated by the use of

VB

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cruciform samples (Fig. 2). The relevant curves recorded in the temperature range 96-143°K are shown in Fig. 3. The authors thank A. I. Ansel'm and G. Ye. Pikus for discussing the paper and reading the manuscript. There are 3 figures and 15 references: 6 Soviet, 2 German, and 7 English.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad
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SUBMITTED: August 1, 1959

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OBRAZTSOV, YU. N.

Dissertation defended for the degree of Doctor of Physicomathematical Sciences at the Technical Physics Institute imeni A. F. Ioffe in 1962:

"Several Problems of the Theory of Genetic Effects in Semiconductors [See Note]."

([NOTE] This dissertation was presented in competition for the academic degree of Candidate of Physicomathematical Sciences, but upon the decision of the Scientific Council of the Institute the competitor was awarded the academic degree of Doctor of Physicomathematical Sciences.)

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

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S/181/62/004/004/028/042
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AUTHORS: Mochan, I. V., Obraztsov, Yu. N., and Smirnova, T. V.

TITLE: Determination of the effective electron mass in InSb from thermo-emf measurements in a strong magnetic field

PERIODICAL: Fizika tverdogo tela, v. 4, no. 4, 1962, 1021-1026

TEXT: It is proposed to determine the effective mass m^* from the thermo-emf in strong magnetic fields, since, if the fields are strong enough, i.e., $uH/c \gg 1$, the emf is independent of the scattering mechanism, which is unknown in most cases. If the energy ε is a quadratic function of the absolute value of the quasimomentum p, the thermo-emf is field-independent; if also electron and field quantization can be neglected ($\hbar\omega/kT \ll 1$), the thermo-emf can be given as $\alpha_\infty = \pm \frac{k}{e}(5F_{3/2}/3F_{1/2} - \mu')$; $F_{3/2}$ and $F_{1/2}$ are the Fermi integrals and $\mu' = \mu/kT$ is the reduced chemical potential; ω is the cyclotron frequency and u is the carrier mobility. In the case of non-degeneracy, $\alpha_\infty = k/e(5/2-\mu')$ and $\mu' = -\ln 2(2\pi m\, kT)^{3/2}/h^3 n$. For

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